

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-6}{2} - \frac{10}{8}x \leq \frac{-9}{3}x + \frac{10}{9}$$

- A. $[a, \infty)$, where $a \in [-3.75, 0]$
 - B. $(-\infty, a]$, where $a \in [0.75, 3.75]$
 - C. $[a, \infty)$, where $a \in [-1.5, 4.5]$
 - D. $(-\infty, a]$, where $a \in [-4.5, -0.75]$
 - E. None of the above.
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2. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

More than 8 units from the number -7 .

- A. $(-15, 1)$
 - B. $[-15, 1]$
 - C. $(-\infty, -15] \cup [1, \infty)$
 - D. $(-\infty, -15) \cup (1, \infty)$
 - E. None of the above
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 9x > 10x \text{ or } -9 + 3x < 6x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [1.5, 6]$ and $b \in [0.75, 12.75]$
- B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6, -0.75]$ and $b \in [-3.75, -2.25]$
- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [1.5, 6]$ and $b \in [2.25, 6]$
- D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-11.25, -2.25]$ and $b \in [-6, -2.25]$

E. $(-\infty, \infty)$

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 5x \leq \frac{42x - 7}{8} < -5 + 4x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-18, -12]$ and $b \in [-3.75, 1.5]$
B. $(a, b]$, where $a \in [-15.75, -9.75]$ and $b \in [-8.25, 0.75]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-17.25, -11.25]$ and $b \in [-5.25, -3]$
D. $[a, b)$, where $a \in [-16.5, -11.25]$ and $b \in [-6, 0]$
E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3x - 9 < 3x - 10$$

- A. $(-\infty, a)$, where $a \in [-0.36, 0.02]$
B. $(-\infty, a)$, where $a \in [0.09, 0.46]$
C. (a, ∞) , where $a \in [-0.04, 0.52]$
D. (a, ∞) , where $a \in [-0.83, 0.16]$
E. None of the above.
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 9x > 12x \text{ or } 3 + 7x < 10x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.5, 0.38]$ and $b \in [1.88, 4.2]$
B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.48, -1.43]$ and $b \in [-1.88, 1.12]$

- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, -2.25]$ and $b \in [0.85, 1.04]$
D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-1.5, 2.25]$ and $b \in [2.31, 4.06]$
E. $(-\infty, \infty)$
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 6x < \frac{-15x - 9}{5} \leq 7 - 4x$$

- A. $(a, b]$, where $a \in [-3, 0]$ and $b \in [7.5, 12]$
B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-3, 0]$ and $b \in [4.5, 12.75]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-2.25, 1.5]$ and $b \in [7.5, 15]$
D. $[a, b)$, where $a \in [-3, -0.75]$ and $b \in [6.75, 11.25]$
E. None of the above.
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8. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 5 units from the number -5 .

- A. $(-\infty, -10] \cup [0, \infty)$
B. $(-\infty, -10) \cup (0, \infty)$
C. $(-10, 0)$
D. $[-10, 0]$
E. None of the above
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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{7}{4} - \frac{4}{6}x \leq \frac{-3}{8}x - \frac{4}{5}$$

- A. $(-\infty, a]$, where $a \in [6, 14.25]$
 - B. $(-\infty, a]$, where $a \in [-10.5, -6.75]$
 - C. $[a, \infty)$, where $a \in [8.25, 12]$
 - D. $[a, \infty)$, where $a \in [-9, -6]$
 - E. None of the above.
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4x + 6 > 3x + 3$$

- A. $(-\infty, a)$, where $a \in [-1.38, -0.13]$
 - B. $(-\infty, a)$, where $a \in [0.41, 1.04]$
 - C. (a, ∞) , where $a \in [0.36, 0.73]$
 - D. (a, ∞) , where $a \in [-1.04, -0.24]$
 - E. None of the above.
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